

METHODS OF POROGEN REMOVAL FOR POROUS LOW DIELECTRIC CONSTANT FILMS USING PLASMA TREATMENTS

ABSTRACT

5 Methods and apparatus for preparing a porous low-k dielectric material on a substrate
are provided. Methods involve the formation of a precursor film on a substrate and removal
of a portion of the porogen from the precursor film using a plasma in one chamber before
transferring the substrate to another chamber for treatment to increase the mechanical
strength of the porous low-k dielectric film. The methods described can reduce residual
10 porogen deposition on reaction chamber walls and can be used to increase wafer throughput
in integrated circuit manufacturing processes.